

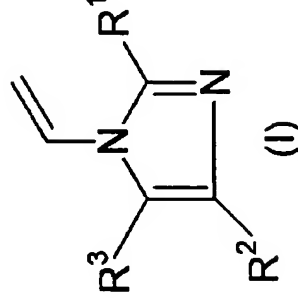
<p><b>2004-526591/51</b>      A96 D21 (A11 A14 A25)      <b>BADI 2002.12.20</b>  <b>BASF AG</b>      *DE 10261197-A1  2002.12.20 2002-1061197(+2002DE-1061197) (2004.07.08) C08L  39/00, A61K 7/00, 7/06  <b>High solids, low viscosity aqueous dispersions especially for use in cosmetics contain a polymer of an N-vinyl monomer, together with polymeric dispersing and precipitation agents and a crosslinker</b>  <b>C2004-193743</b>  Addnl. Data:    CHRISSTOFFELS L, HOESSEL P, LEDUC M, WOOD C,  ANGEL M, MATHAUER K</p>	<p>A(12-V4) D(8-B)</p> <p><b>INDEPENDENT CLAIMS</b> are also included for (i) production of the dispersions; and (ii) aqueous solutions obtained by dilution of the dispersions with water.</p> <p><u>USE</u>  As a thickener or conditioner or in increasing the viscosity of a preparation by adding the aqueous dispersion and (especially <math>\geq 2</math> wt. %) water and in cosmetics (claimed).</p>
<p><u>NOVELTY</u>  Aqueous dispersions are new when produced from the following ingredients with the wt. ratio (B) : (C) being 1 : 0.02-50 :</p> <ul style="list-style-type: none"> <li>(a) an N- vinyl monomer;</li> <li>(b) a polymeric dispersant;</li> <li>(c) a polymeric precipitation agent;</li> <li>(d) a crosslinker; and optionally also</li> <li>(e) further monomers;</li> <li>(f) a regulator; and/or</li> <li>(g) a buffer.</li> </ul> <p><u>DETAILED DESCRIPTION</u></p>	<p><u>ADVANTAGE</u>  The dispersions are especially suited to use as conditioners in hair cosmetics such as shampoos, having a high solids content and low viscosity and giving good properties such as combability.</p> <p><u>EXAMPLE</u>  An aqueous dispersion of solids content 39.9 wt. % and viscosity 650 mPas was obtained by (i) adding N-vinylformamide (180 g), N-vinyl-2- methylimidazolium methyl sulfate (44.4g; 45% aqueous solution) and triallylamine (0.6 g) to a homogeneous solution of water</p> <p>DE 10261197-A+</p>

(575.7 g), sodium dihydrogenphosphate dihydrate (2 g), polyvinyl pyrrolidone (6 g; K value 90), polyvinyl pyrrolidone (10 g; K value 17), and polyethyleneglycol (180 g; molecular weight 1500) and setting the pH to 6.75 with 25% caustic soda; (ii) adding Wako V50 (RTM : 2,2'- azobis-2-(aminopropane)dihydrochloride) (1 g) and polymerizing for 4 hours at 55°C; and (iv) adding further Wako V50 (RTM) (0.24 g) and polymerizing for 2 hours at 65°C.

#### TECHNOLOGY FOCUS

Polymers - Claimed Preparation : Involves reacting (A) - (D) and optionally also (E) and (G) in presence of regulator (F) with the (B) : (C) ratio being 1 : 0.02-50. Preferred Composition : The wt. ratio (B) : (C) is 1 : 0.05-20 and the weight ratio ((B) + (C) : other monomers is 10 : 1-1 : 0.1. The obtained dispersion is optionally hydrolyzed, especially to an amine content in the polymer of below 20 mol. % based on monomer (A). Preferred Materials : Monomer (A) is an N-vinylamide or N-vinyl lactam, while dispersant (B) is polyvinyl acetate, polyalkylene (especially polyethylene) glycol, polyvinyl alcohol, polyvinyl pyridine, polyethylene imine, polyvinyl imidazole, polyvinyl succinimide and polydiallyldimethylammonium chloride, polyvinyl pyrrolidone (PVP), polymers containing  $\geq 5$  wt. % vinyl pyrrolidone (VP) units, polymers containing  $\geq 50$  wt. % vinyl alcohol

units, optionally chemically-modified oligo- or poly-saccharides (especially carboxymethylcellulose), oxidatively-, hydrolytically- or enzymatically-degraded polysaccharides, water-soluble starch or derivatives, starch esters, starch xanthogenates, starch acetates and/or dextran, especially PVP and/or polymers containing  $\geq 5$  wt. % VP units. Precipitation agent (C) is a water-soluble polyether-containing compound, especially of formula (I) and, in particular, polyethyleneglycol of molecular weight 300-100000, especially 1000-10000.

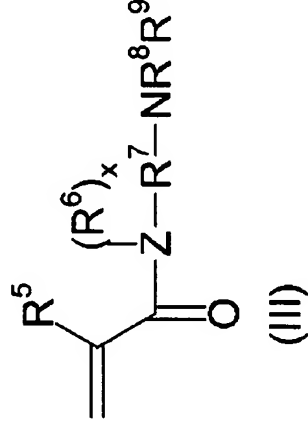
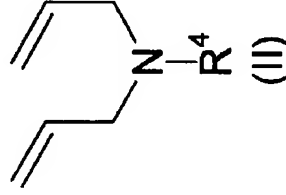


$R^1 = H, 1-24C$  alkyl,  $R^6-CO-$ ,  $R^6-NHCO-$  or polyalcohol residue;

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$R^2$ - $R^4$  =  $-(CH_2)_2$ -2,4,  $-CH_2CH(R^6)$ - or  $-CH_2CHOR^7-CH_2$ -;  
 $R^5$  and  $R^7$  = as for  $R^1$  but excluding polyalcohol residues;  
 $R^6$  = 1-24C alkyl;  
 $A$  =  $-COO-$ ,  $-CO-B-COO-$ ,  $-CH_2CH(OH)-B-CH(OH)-CH_2-O-$ ,  $-CONH-B-NH-COO-$  or  $-C(R^{30})(R^{31})-O-$ ;  
 $B$  =  $-(CH_2)_t$  or arylene, optionally substituted;  
 $R^{30}$  and  $R^{31}$  = H, 1-24C alkyl or hydroxyalkyl, benzyl or phenyl;  
 $n$  = 1 when  $R^1$  is not polyalcohol and 1-1000 when  $R^1$  is polyalcohol;  
 $s$  = 0-1000;  
 $t$  = 1-12;  
 $u$  = 1-5000; and  $v$ ,  $w$ ,  $x$  and  $y$  = 0-5000  
 Further monomers (E) are cationic or quatermerizable monomers, especially N- substituted diallylamine of formula (II) or N-vinylimidazole derivatives of formula (III)



$R^1$  -  $R^3$  = H, 1-4C alkyl or phenyl; and  
 $R^4$  = 1-24C alkyl  
 Regulator (F) is multifunctional.  
 (64pp 1958DwgNo.0/0)

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